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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/857,613	06/04/2001	Rebecca E. Cahoon	BB-1289	5025

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EXAMINER

BUI, PHUONG T

ART UNIT

PAPER NUMBER

1638

DATE MAILED: 05/07/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/857,612

Applicant(s)

Cahoon et al.

Examiner

Phuong Bui

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Feb 10, 2003
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-31, 33-38, 40, 41, and 43 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26-29, 33-38, 40, 41, and 43 is/are rejected.
- 7) ☒ Claim(s) 30 and 31 is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other: _____

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DETAILED ACTION

1. The Office acknowledges the receipt of Applicant's restriction election filed February 10, 2003. In the restriction election, Applicant elected Group I and SEQ ID NO:27 encoding SEQ ID NO:28 with traverse. The traversal is on the grounds that the amino acid sequences shown in SEQ ID NOs: 8 and 28 are 99.1% identical to each other and only differ at 33 positions. Applicant's traversal is unpersuasive because the claims are drawn to nucleotide sequences, not amino acid sequences, and thus the difference at the nucleotide level would be greater than at the amino acid level. Further, the sequences claimed are at 80% sequence identity (not 100%) and thus would encompass a larger number of sequences which must be considered for prior art purposes. Additionally, due to the large size of each sequence, each must be individually submitted, independently computer-searched, and separately analyzed. For these reasons, the inclusion of SEQ ID NO:7 encoding SEQ ID NO:8 would represent undue burden on Office resources. Accordingly, claims 26-31, 33-38, 40-41 and 43 (SEQ ID NO:27 encoding SEQ ID NO:28) are pending and are examined in the instant application. It is suggested that the claims be amended to delete the nonelected invention. This restriction is made FINAL.

Sequence Listing

2. Applicant's CRF and paper sequence listing have been entered. However, upon examination of SEQ ID NO:27 and its corresponding amino acid sequence SEQ ID NO:28, it is unclear what region of SEQ ID NO:27 encodes SEQ ID NO:28. Clarification is required.

Information Disclosure Statement

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3. An initialed and dated copy of Applicant's IDS form 1449, Paper No. 9, is attached to the instant Office action.

Drawings

4. Formal drawings are required in response to the instant Office action.

Specification Objections

5. The following informality has been noted and requires correction in response to this Office Action. Since figures must be numbered separately, i.e. "Figure 1A," "Figure 1B," etc. , Applicant is required to amend the Brief Description of the Drawings in Applicant's disclosure accordingly to reflect the proper figure designations which are in formal drawings when drawings are submitted. Specifically, each page of the drawings must have a separate figure designation.

6. On page 2, lines 3-4, which states "Since mammals can not [sic] synthesize tocopherols, the enzymes described here may be used for the discovery of new herbicides." Since tocopherols are Vitamin E, it is unclear how Vitamin E may be used to discover new herbicides, since Vitamin E does not appear to be toxic to plants. Clarification is required.

Claim Rejections - 35 USC § 112, second paragraph

7. Claims 26-29, 33-38, 40-41 and 43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 26, it is suggested that Applicant sets forth the parameters for determining the sequence identity using the Clustal method of alignment.

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In claim 33, it is unclear how the vitamin E biosynthetic enzyme is related to the gamma tocopherol methyltransferase of claim 26. It is suggested that "vitamin E biosynthetic enzyme" be amended to "gamma tocopherol methyltransferase" for consistency and clarification.

It would appear that claims 34 and 36 should depend from claim 26.

Claim 30 is an incomplete method claim because it does not result in a transgenic plant.

Claims 40-41, which recite "gene", "gene" implies a DNA sequence that exists in nature and includes coding and noncoding regions, as well as all regulatory sequences associated with expression. This does not appear to be Applicant's intention, as evidenced by Applicant's recitation of "chimeric gene". It is suggested that "A chimeric gene" be amended to "A recombinant DNA construct". Clarification and/or correction are required.

Claim Rejections - 35 USC § 112, first paragraph

8. Claims 26-29, 33-38, 40-41 and 43 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a written description rejection. Claims which recite 80-95% sequence identity, lack adequate written description because Applicant does not disclose a representative number of species as encompassed by these claims. The claims encompass mutants and allelic variants and thus imply that structural variants exist in nature, yet no structural variant has been disclosed. The claims also encompass gamma tocopherol methyltransferases from other species. The implication is that there is a gene and a protein other than that disclosed which exists in nature, but the structure thereof is not known.

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The disclosure of SEQ ID NO:27 encoding SEQ ID NO:28 obtained from *Glycine max* does not allow one skilled in the art to predict the structure of nucleotide sequences encoding gamma tocopherol methyltransferases from other sources having 80-95% sequence identity with SEQ ID NO:28 at the amino acid level. Thus, there is insufficient relevant identifying characteristics to allow one skilled in the art to predictably determine such mutants, allelic variants and gamma tocopherol methyltransferases from other plants and organisms, absent further guidance.

Accordingly, there is lack of adequate description to inform a skilled artisan that applicant was in possession of the claimed invention at the time of filing. See Written Description guidelines published in Federal Register/ Vol.66, No. 4/ Friday, January 5, 2001/ Notices; p. 1099-1111.

Remarks

9. Claims 30-31 are objected to as being dependent on a rejected claim but would be allowable if written in independent form and amended accordingly to delete the nonelected invention. SEQ ID NO:27 encoding SEQ ID NO:28 are free of the prior art. The closest prior art teaches a gamma tocopherol methyltransferase obtained from *Arabidopsis thaliana* having 62.6% sequence identity to SEQ ID NO:28 at the amino acid level (Table 5, page 24 of specification).

10. Papers relating to this application may be submitted to Technology Sector 1 by facsimile transmission. Papers should be faxed to Crystal Mall 1, Art Unit 1638, using fax number (703) 308-4242. All Technology Sector 1 fax machines are available to receive transmissions 24 hrs/day, 7 days/wk. Please note that the faxing of such papers must conform with the Notice published in the Official Gazette, 1096 OG 30, (November 15, 1989).


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong Bui whose telephone number is (703) 305-1996. The Examiner can normally be reached Monday-Friday from 6:30 AM - 4:00 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Amy Nelson, can be reached at (703) 306-3218.

Any inquiry of a general nature or relating to the status of this application should be directed to the receptionist whose telephone number is (703) 308-0196.

Phuong Bui
Primary Examiner
Group Art Unit 1638
May 2, 2003


PHUONG T. BUI
PRIMARY EXAMINER